ABSTRACT

A configuration and for acquisition and/or monitoring of medical data from the tissue portion of a person or animal, in particular the state of the cardiovascular and pulmonary system thereof. At least one measuring sensor for acquisition of the medical data is located adjacent the tissue portion and includes a light source such as at least two LEDs which emit light at least at two wavelengths, at least one light receiver for determining the light transmitted and/or reflected through the tissue portion structures for increasing the optical Signal-to-Noise and/or Signal-to-Background ratio for the measuring sensor. Such may be beam shaping elements for directing light emitted by the two LEDs directly from the LEDs and directly to the tissue portion, the light receiver being a photo detecting element, or the configuration and method may have a filter for optically wavelength filtering light from the light source to the receiver.